Claim Listing

1–20. (cancelled)

21. (currently amended) A method for forming a film on a continuous or endless planar surface, comprising the steps of:

moving the continuous or endless planar surface between a row of electrodes and a backing electrode which are located at opposite sides of the continuous or endless planar surface and are at different potentials ~~and past an electrostatic powder deposition unit~~;

supplying pre-charged particles to a feeding nozzle, the feeding nozzle forming an electrode is a position between pre-charging electrodes to form the row of electrodes and depositing onto the continuous or endless planar surface a layer of the pre-charged particles ~~electrically charged thermoplastic particles~~ of average size less than 100 μm containing less than 40 wt-% inorganic additives to form a granular layer, wherein the particles are ~~charged and~~ applied to the continuous or endless planar surface by the powder deposition unit utilizing an electric field created by the row of electrodes formed by the feeding nozzle and the pre-charging electrodes; and

finishing the granular layer in a calender with at least one heated member contacting the granular layer, to form a first film.

22. (previously presented) The method for forming a film of claim 21, wherein the at least one heated member contacting the granular layer is a roll.

23. (withdrawn) The method for forming a film of claim 21, further comprising the step of: peeling the film off from the continuous or endless planar surface.

24. (previously presented) The method for forming a film of claim 21, wherein

the continuous or endless planar surface is a paper web.

25. (currently amended) The method for forming a film of claim 21 wherein the continuous or endless planar surface is a paper web; and further comprising the steps of:

moving the continuous paper web at 150 to 1,200 meters per minute between the electrodes which are located at opposite sides of the web and are at different potentials and past the electrostatic powder deposition unit;

depositing onto the web the layer of electrically charged thermoplastic particles of average size less than 100 μm containing less than 40 wt-% inorganic additives to form the granular layer wherein the granular layer has a weight of 3–60 g/m^2, wherein the particles are charged and applied to the continuous paper web by the powder deposition unit utilizing an electric field created by the electrodes; and

finishing the web with the granular layer in the calender with at least one heated member contacting the granular layer, to form a first film which is 3–100 μm thick.

26. (previously presented) The method for forming a film of claim 25, wherein the at least one heated member contacting the granular layer is a roll.

27. (previously presented) The method of claim 25, wherein the electrodes at the opposite sides of the web comprise either:

a pair of a positive electrode and a negative electrode; or

a negative or a positive electrode and an earthing electrode.

28. (currently amended) The method of claim 25, wherein a second film is formed on a side of the paper web opposite the first film by a process which is the same as used to form the first film [[side]].

29. (previously presented) The method of claim 27, wherein the second film is formed on the side of the paper web opposite the first film at the same time as the first film is formed.

30. (previously presented) The method of claim 25, wherein the particles are carried to the web in a gaseous flow.

31. (previously presented) The method of claim 25, wherein the particles are charged by corona charging electrodes.

32. (previously presented) The method of claim 25, wherein the particles are charged by a system using triboelectric charging.

33. (previously presented) The method of claim 25, wherein the particles are charged by using both corona charging electrodes and a system using triboelectric charging.

34. (withdrawn) A method for forming a film on a continuous paper web, comprising the step of rebuilding a converting line by replacing an existing means for forming the film on the surface of the paper web by a device comprising:

electrodes which are located at opposite sides of the web and are at different potentials and past a electrostatic powder deposition unit;

means for depositing on to the web a layer of electrically charged thermoplastic particles of average size less than 100μm containing less than 40% inorganic additives to form a granular layer of 3–60 g/m^2, wherein the particles are charged and applied to the the continuous paper web by the powder deposition unit utilizing an electric field created by the electrodes; and

a calender with at least one heated member contacting the granular layer, for finishing the granular layer on the web to form a 3–100μm thick film.

35. (withdrawn) The method for forming a film of claim 21, wherein the at least one heated member contacting the granular layer is a roll.

36. (new) A method for forming a film on a continuous paper web or board, wherein motion of the paper or board web defines an upstream and a downstream direction, comprising the steps of:

pre-charging particles of a dry powder within a charging unit;

supplying the pre-charged particles from the charging unit to negatively charge a feeding nozzle which forms an electrode and blowing the pre-charged particles from the feeding nozzle toward the paper or board web, the feeding nozzle being positioned between negatively charged electrodes producing corona discharges, wherein the negatively charged electrodes are positioned outside of the charging unit and laterally spaced from the feeding nozzle, so that the negatively charged electrodes and the feeding nozzle form a row, wherein the negatively charged electrodes strengthen the performance of the electrode formed by the feeding nozzle; and

wherein the paper or board web is backed by a grounding electrode at a potential which is lower than or opposite to the potentials of the feeding nozzle, the upstream electrode and the downstream electrode.

37. (new) The method of claim 5 wherein the grounding electrode is a stationary platy electrode.